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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,694	12/08/2004	Guido Noselli	71636	1928

23872 7590 11/14/2006

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EXAMINER

LUKS, JEREMY AUSTIN

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/517,694	Applicant(s) NOSELLI ET AL.	
	Examiner Jeremy Luks	Art Unit 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/8/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group 2 in the reply filed on 10/24/06 is acknowledged. The traversal is on the ground(s) that the method of Group 1 is not for use with a materially different product than that of Group 1. The Examiner disagrees, the product contains limitations not included in the method claims, and elected by applicant, Group 2, claims 13-22 will be examined. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 103

2. Claims 13-16 and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pfister (5,220,608) in view of Hulsebus (6,257,365). Pfister teaches a reflecting wave guide (Figure 1) for sound emission starting from a sound emission plane consisting in a flat traditional loudspeaker (4) (Col. 2, Lines 45-47), characterized by a sound reflection surface (10) positioned in front of the sound emission plane (4), and by at least one reflection surface (7) combined with the sound reflection surface (10) is intended to diffuse the sound towards a measurement or listening position; where the aforementioned reflection surface (10) positioned in front of the sound emission plane (4) has a convex parabolic form, in which at least one reflection surface (7) of the sound associated with the sound source has a geometry which can be planar, concave or convex surfaces or their combinations, and has a planar, parabolic, hyperbolic or elliptical form, and wherein the aforementioned reflection surface (7) is formed by the surface of elements in rigid reflecting material. Pfister fails to teach

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wherein the a sound reflection surface is configured to transform the sound emission plane into a real point source, wherein the system is used in a vertical line array, wherein the sound emission plane is a compression driver; and wherein surface elements formed by extrusion of revolution. Hulsebus teaches a sound reflection surface (Figure 8, #14) configured to transform a sound emission plane (12) into a real point source (Col. 10, Lines 22-25; Col. 13, Lines 50-56), wherein the sound emission plane is a compression driver (Col. 11, Line 64- Col. 12, Line4); and wherein the system is used in a vertical line array (Col. 11, Lines 20-24). The Examiner considers the teaching of using the speaker system in a professional theater to inherently teach a vertical line array. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Pfister, with the apparatus of Hulsebus to eliminate lobing errors associated with conventional speaker systems. Hulsebus fails to teach multiple reflection surfaces, and wherein surface elements formed by extrusion of revolution. However, It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide multiple reflection surfaces, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Further, with respect to Claim 16, the method of forming a device is not germane to the issue of patentability of the device itself. Therefore, this limitation has been given little patentable weight; and it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

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3. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pfister (5,220,608) in view of Hulsebus (6,257,365) as applied to claim 13 above, and further in view of Olson (3,105,113). Pfister and Hulsebus are relied upon for the reasons and disclosures set forth above. Pfister and Hulsebus fail to teach parallel intermediary panels forming seven horizontal partitions forming ducts in the wave-guide whose dimensions are smaller than wavelength of the highest frequency that has to pass through them. Olson teaches parallel intermediary panels (Figure 4, #27-33) forming seven horizontal partitions forming ducts (D1-D6) in the wave-guide when used in combination, whose dimensions are smaller than wavelength of the highest frequency that has to pass through them (Col. 4, Line 64 - Col. 5, Line 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Pfister as modified, with the apparatus of Olson to ensure that the waves exiting the sound source will all be in phase with one another.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pfister (5,220,608) in view of Hulsebus (6,257,365) as applied to claim 13 above, and further in view of Rexroat (6,393,131) and Noselli (EP 1137318 A2). Pfister and Hulsebus are relied upon for the reasons and disclosures set forth above. Pfister and Hulsebus further teach a means of sound emission including a loudspeaker (Figure 1, #4) partially covered by a rigid panel (9) at the front of the system. Pfister and Hulsebus fail to teach wherein the means of sound emission are enclosed in a body having a cavity at the front formed on opposite sides by two divergent side walls, and open from two other opposite sides, an emission slot for high frequency on the bottom of said cavity, and facing each of said side walls there is at least a part of a loudspeaker for medium and

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low frequency, at the sides of said cavity there are two slots forming external apertures of sound ducts of the loudspeakers for medium low tones and/or sound emission of additional loudspeakers housed in the body. Rexroat teaches sound transmission means (Figure 3, #54 and 56) enclosed in a body (Figure 1, #12) having a cavity (the open inner area formed between walls 26, 42, 32 and 28, 50, 34, and walls 16 and 18 forms a cavity) at the front formed on opposite sides by two divergent side walls (44 and 48), and open from two other opposite sides, an emission slot (37) on the bottom of said cavity, and facing each of said side walls (figure 3, #44 and 48) there is at least a part of a loudspeaker (54 and 56). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Pfister as modified, with the apparatus of Rexroat to provide a sound system free of crossover points in the vocal range. Rexroat fails to teach two slots forming external apertures of sound ducts of a loudspeaker for medium low tones at the sides of a cavity and wherein the emission slot is for high frequencies and the loudspeakers are for medium and low frequencies.

However, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex Parte Masham*, 2 USPQ F.2d 1647 (1987). Further a change in size is generally recognized as being within the level of ordinary skill in the art. In *re Rose*, 105 USPQ 237 (CCPA 1955); and it has been held that discovering the optimum value of a result effective variable involves only routine skill in the Art. In *re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Noselli teaches two slots (16) forming external apertures of sound ducts (12) of a loudspeaker (11) for medium low tones (Col. 3, [0019]) at the

sides of a cavity when used in combination. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Pfister as modified, with the apparatus of Noselli to enhance lower frequencies by utilizing the back-waves of the loudspeaker.

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pfister (5,220,608) in view of Hulsebus (6,257,365), Rexroat (6,393,131) and Noselli (EP 1137318 A2) as applied to claim 20 above, and further in view of Zurek (6,292,573). Pfister, Hulsebus, Rexroat and Noselli are relied upon for the reasons and disclosures set forth above. Rexroat further teaches a body (Figure 1, #12) having an emission slot (37) in the center of a cavity. Pfister, Hulsebus, Rexroat and Noselli fail to teach wherein said body is made up of two portions rocking on an oscillating axis placed near and parallel to the emission slot at the bottom of said cavity in order to be able to change the dimension, therefore the volume of the front cavity of the body and calibrate the horizontal dispersion of the sound by varying the angular disposition of the side walls forming said cavity. Zurek teaches a body made up of two portions (Figure 14, # the wall portions defining spaces #504 and 506) rocking on an oscillating axis placed near and parallel to the emission slot (note that Zurek's axis is centered with in the apparatus as is the emission slot or Rexroat) at the bottom of said cavity in order to be able to change the dimension (see change from Figures 13 to 14) when used in combination, therefore the volume (506) of the front cavity of the body and calibrate the horizontal dispersion of the sound by varying the angular disposition of the side walls forming said cavity when used in combination. It would have been obvious to one of

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ordinary skill in the art at the time of the invention to combine the apparatus of Pfister as modified, with the apparatus of Zurek to tune housing of the speaker system.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pfister (5,220,608) in view of Hulsebus (6,257,365), Rexroat (6,393,131) and Noselli (EP 1137318 A2) as applied to claim 20 above, and further in view of Hughes (6,147,748). Pfister, Hulsebus, Rexroat and Noselli are relied upon for the reasons and disclosures set forth above. Rexroat further teaches a body (Figure 1, #12) having an emission slot (37) in the center of a cavity. Pfister, Hulsebus, Rexroat and Noselli fail to teach wherein a laser beam tracking system is positioned in the centre center of the emission slot at the bottom of said front cavity coinciding with the high frequency emission axis. Hughes teaches a laser beam tracking system (Figure 2) is positioned in the center of the emission slot at the bottom of said front cavity coinciding with the high frequency emission axis when used in combination with Pfister as modified. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the apparatus of Pfister as modified, with the apparatus of Hughes to precisely position the speaker system relative to a point for optimum sound quality.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent arts of record relating to single and multiple reflection wave-guides are disclosed in the PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Luks whose telephone number is (571) 272-

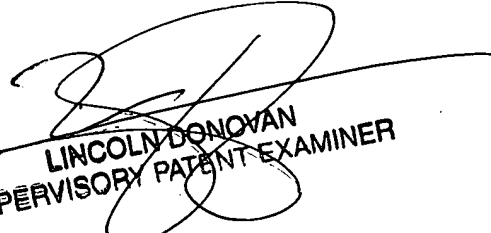
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2707. The examiner can normally be reached on Monday-Thursday 8:30-6:00, and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-1988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeremy Luks
Patent Examiner
Art Unit 2837
Class 181


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